

# AUTOMOTIVE SERVICE TECHNICIAN

## INTRODUCTION TO AUTOMOTIVE SERVICE

Levels: Grades 10-12  
Units of Credit: Semester  
CIP Code: 47.0604  
Prerequisite: None

### **CORE STANDARDS, OBJECTIVES, AND INDICATORS**

**STANDARD**      **Students will be able to understand general shop safety**  
**470604-01**

#### **OBJECTIVES**

470604-0101      Learn safe working habits and procedures. Pass a safety test with 100 percent.  
470604-0102      Identify the different types and hazards of solvents used in automotive.  
470604-0103      Identify the different types, purposes, and hazards of automotive greases, oils, and additives.  
470604-0104      Identify precautions in the use, handling, and storage of various automotive solvents, cleaners, oils, greases, and additives.  
470604-0105      Identify the gasses encountered in the automotive field and the hazards they present.  
470604-0106      Identify the hazards and control of asbestos dust.  
470604-0107      Comply with safety rules for working with automotive chemicals (MSDS).

**STANDARD**      **Students will be able to understand basic hand tools, fasteners, and shop equipment.**  
**470604-02**

#### **OBJECTIVES**

470604-0201      Identify and measure metric and standard fasteners.  
470604-0202      Use the pressure washer to prepare projects to be worked on. (Optional)  
470604-0203      Correctly identify and use basic hand tools.  
470604-0204      Identify and demonstrate use of basic measuring tools.  
470604-0205      Use reference manuals or information systems to find R/R procedures and specifications.  
470604-0206      Properly raise and support vehicles using jack stands and a frame contact hoist. Identify other shop equipment.

**STANDARD**      **Students will be able to understand proper techniques in removal and installation of tires and wheels.**  
**470604-03**

#### **OBJECTIVES**

- 470604-0301 Inspect tires for abnormal wear and check tire pressure.  
470604-0302 R/R a tire from a wheel using the proper equipment, techniques, and safety precautions.  
470604-0303 Properly rotate tires and reinstall using proper torque procedures.  
470604-0304 Use a tire balancer to balance tires of a vehicle using proper procedures.  
470604-0305 Locate a leak. Remove the tire from the rim and patch the hole. Reinstall the tire on the rim and check for leaks. Check tire balance.

**STANDARD**  
**470604-04** **Students will be able to identify and perform basic services on a vehicle.**

**OBJECTIVES**

- 470604-0401 Locate and identify basic automotive parts and functions.
  - Identify engine parts and functions.
  - Identify drive train parts and functions.
  - Identify brake parts and functions.
  - Identify steering and suspension parts and functions.
  - Identify electrical parts and functions.  
470604-0402 Based on the manufacture's specifications, check and adjust all underhood fluid levels. Check all belts and hoses.  
470604-0403 Change engine oil, filter, and lubricant, and check all fluid levels on a vehicle. Use proper disposal methods for waste oil.  
470604-0404 Using a voltmeter, check battery voltage with the engine running and with the engine off.  
470604-0405 Check shocks or struts for leakage and proper operation.  
470604-0406 Locate and identify the fuel filter.  
470604-0407 Check and adjust brakes including park brake. Make sure to top off brake fluid.  
470604-0408 Check lights and R/R a light.

**STANDARD**  
**470604-05** **Students will be able to identify basic emission components.**

**OBJECTIVES**

- 470604-0501 Identify major emission components.  
470604-0502 Run an emission test on a vehicle. (Optional)

**STANDARD**  
**470604-06** **Students will be able to solve basic mathematical equations related to automotive.**

**OBJECTIVES**

- 470604-0601 Solve addition, subtraction, multiplication, and division of whole number problems with two- and three-digits.  
470604-0602 Solve addition subtraction, multiplication, and division of

	fraction problems.
470604-06 <u>03</u>	Solve addition subtraction, multiplication, and division of decimal problems with two- and three-digits.
470604-06 <u>04</u>	Solve fraction-to-decimal conversion problems.
470604-06 <u>05</u>	Solve decimal-to-fraction conversion problems.
470604-06 <u>06</u>	Solve decimal-to-percent conversion problems.
470604-06 <u>07</u>	Solve percent-to-decimal conversion problems.
470604-06 <u>08</u>	Solve basic ratio-to-proportion problems.
470604-06 <u>09</u>	Solve basic linear-measurement problems.

**STANDARD**      **Students will be able to identify and properly perform a vehicle inspection. (Optional)**  
**470604-07**

**OBJECTIVES**

470604-07 <u>01</u>	Check for registration.
470604-07 <u>02</u>	Inspect vehicle tires and wheels for excessive wear, damage, mismatched sizes, and improper mounting and illegal studs.
470604-07 <u>03</u>	Inspect vehicle steering and suspension assemblies for excessive wear, damage, missing parts, and improper functioning.
470604-07 <u>04</u>	Inspect altered vehicles to confirm that they conform to required tolerances for raised or lowered suspension and other changes.
470604-07 <u>05</u>	Using a brake plate or visual method, inspect vehicle brake systems for excessive wear, damage, missing parts, improper functioning, and other related safety hazards.
470604-07 <u>06</u>	Inspect vehicle windshield and other glass for excessive damage, breakage, inadequate movement, and unsafe alterations.
470604-07 <u>07</u>	Inspect vehicle headlights and auxiliary lights for correct aiming; inspect headlights, auxiliary lights, tail lights, brake lights, turn signals, and other lights for malfunction, damage, or other unsafe conditions.
470604-07 <u>08</u>	Inspect vehicle windshield wipers, windshield washers, windshield defrosters, horn, speedometer, odometer, and automatic transmission/starter interlock for damage or malfunction.
470604-07 <u>09</u>	Inspect vehicle body, frame, motor mounts, fenders, bumpers, floor pan, doors, hood, seats, exterior mirrors, interior mirror, and seat belts for excessive damage, illegal configuration, missing parts, and malfunction of mechanical assemblies.
470604-07 <u>10</u>	Inspect vehicle exhaust systems for excessive wear, damage, malfunction, and illegal configuration.
470604-07 <u>11</u>	Inspect vehicle fuel systems for damage, malfunction, or leakage.
470604-07 <u>12</u>	Inspect "Sand" or "Dune" buggies to meet regular passenger car requirements. Inspect street rods and other modified vehicles to meet minimum equipment and safety requirements for limited use on public highways.

**STANDARD**      **Students will be able to understand the importance of job skills. (Optional)**  
**470604-08**

**OBJECTIVES**

- 470604-0801 Prepare a resume.  
470604-0802 Practice interview skills.

**STANDARD  
470604-09**

**Students will be able to understand the importance of employability and work habits.**

**OBJECTIVES**

- 470604-0901 Integrity  
470604-0902 Punctuality  
470604-0903 Staying on task  
470604-0904 Productive team worker  
470604-0905 Leadership

**STANDARD  
470604-10****PROFESSIONAL DEVELOPMENT**

**The student will understand the need for professional development.**

**OBJECTIVES**

- 470604-1001 Complete a personal inventory.  
470604-1002 Set and meet goals.  
470604-1003 Be self-motivated.  
470604-1004 Know how to make decisions.  
470604-1005 Know how to manage time.  
470604-1006 Organize personal belongings and lab equipment.  
470604-1007 Learn to communicate verbally.  
470604-1008 Write effective communications.  
470604-1009 Establish a personal reading program.  
470604-1010 Develop effective work skills and attitudes.  
470604-1011\* Master a working knowledge of SkillsUSA.
  - State the SkillsUSA motto.
  - State the SkillsUSA creed.
  - Learn the SkillsUSA colors.
  - Describe the official SkillsUSA dress.
  - Describe the procedure for becoming a SkillsUSA officer.

**STANDARD  
470604-11**

**The student will understand the need for leadership skills.**

**OBJECTIVES**

- 470604-1101 Serve on a committee.  
470604-1102 Prepare an agenda.  
470604-1103 Assist in planning a meeting.  
470604-1104 Review basic parliamentary procedure.
  - Make a main motion.

- 470604-1105 Participate in a school project.
- 470604-1106 Attend a community meeting.
- 470604-1107 Practice effective speaking.
- 470604-1108 Present a three- to five-minute talk.
- 470604-1109 Implement a leadership project.
- 470604-1110\* Master a working knowledge of SkillsUSA.
  - Describe the meaning of the SkillsUSA emblem.
  - State the SkillsUSA pledge.
  - Describe the duties of a SkillsUSA officer.

**STANDARD**      **The student will understand the need for career planning.**  
**470604-12**

**OBJECTIVES**

- 470604-1201 Define your future occupation.
- 470604-1202 Survey employment opportunities.
- 470604-1203 Report on a trade journal article.
- 470604-1204 Explore opportunities for advanced training.
- 470604-1205 Conduct a worker interview.
- 470604-1206 Contact a professional association.
- 470604-1207 Explore entrepreneurship opportunities.
- 470604-1208 Give a talk about your career.
- 470604-1209 Review career goals.

**STANDARD**      **The student will understand the importance of employability and**  
**470604-13**      **work habits.**

**OBJECTIVES**

- 470604-1301 Develop a list of work standards to follow at school and on the job.
- 470604-1302 Evaluate your personal ethics.
  - Evaluate your personal ethics against acceptable workplace ethics.
- 470604-1303 Build a job search network.
- 470604-1304 Find job leads.
- 470604-1305 Write a resume.
- 470604-1306 Create a job portfolio.
- 470604-1307 Complete a job application.
- 470604-1308 Write a business letter and memo.
- 470604-1309 Participate in an actual or simulated job interview.

\* SkillsUSA PDP requirements - optional but recommended

